

REMARKS

This amendment is submitted in response to the Office Action dated January 17, 2003. Reconsideration and allowance of the claims is requested. In this Office Action, the drawings are objected to as failing to show the fluid which the Examiner considers to be claimed in the claims. Therefore, the claims have been modified to indicate that the counterplate is welded to the arms of the sleeve to contain fluid therein without explicitly claiming the fluid as part of the claimed combination. Therefore, the objection to the drawings can be withdrawn.

The Examiner objects to claims 1-7 and 9 as being unclear, as the Examiner states that from the claim it seems as if the counterplate forms part of the thrust in the journal bearing. Therefore, the claims have been reviewed and revised to eliminate the issue.

The Applicant wishes to note that the present invention is useable with both fixed shaft and rotating shaft designs. Therefore, looking at Figure 1, one can see that the shaft is fixed and the sleeve which supports the counterplate at an end thereof also supports a hub and the sleeve counterplate and hub rotate around the shaft and thrust plate to rotate the disks. In Figure 2, the shaft 100 supports the hub 102; the sleeve is now fixed to the base, and still supports a counterplate. Therefore, it is consistent to claim both fixed shaft and rotating shaft designs.

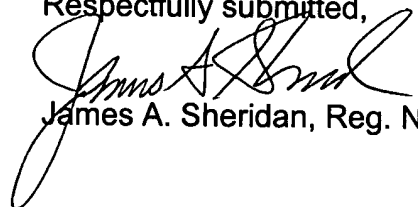
As to the prior art, the Examiner has rejected all of the claims as obvious over Oku in view of Moritan and Kunze. This rejection is respectfully traversed. The Applicant first wishes to deal with the Examiner's statement in the Office Action that there is no positive recitation of the counterplate being welded to the sleeve in the motor. A review of the claims and specifically the pending claims in the subject application establishes that this is simply incorrect. The Examiner is requested to take note e.g. of line 5 of claim 1, and line 7 of claim 8 wherein the means for retaining fluid can only read on the counterplate welded to the sleeve. Moreover, claim 9 specifically recites the limitations at issue.

The Applicants have extensively dealt with the issue of whether Oku or Moritan shows the counterplate welded to the sleeve in the previous response filed in 2002. Therefore, as to whether or not Oku or Moritan singly or together show this feature, the Examiner is respectfully referred to pages 3-7 of that response which are incorporated herein.

The Examiner has now added a citation to Kunze, U.S.P. 5,743,015. However, Kunze only shows that two pieces may be welded together. Kunze does not show, suggest or infer to a person of skill in the art that the part 1 could be used as a counterplate. Further, Kunze does not suggest welding the parts together to prevent loss of fluid from a region adjacent the counterplate. Finally, Kunze does not teach a motor utilizing a fluid dynamic bearing, wherein the weld is used not simply to maintain the position of the two parts (which is the only teaching of Kunze), but to prevent loss of fluid through a region now closed off by the weld.

In view of these clear distinctions, reconsideration and allowance of the claims is requested.

Respectfully submitted,



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APPENDIX I
MARKED-UP VERSION OF CLAIMS

1. (Twice Amended) A spindle motor for use in a disc drive comprising a shaft supporting a thrust plate at one end thereof,
a sleeve surrounding the shaft and adjacent the thrust plate and cooperating with the shaft to define a journal bearing and the thrust plate to define a [first]fluid thrust bearing,
a counterplate welded to said sleeve and located adjacent said thrust plate[to define a second fluid dynamic thrust bearing],
the welded counterplate being adapted to contain[ing] fluid within the thrust [bearings]bearing and the journal bearing.
2. A spindle motor as claimed in claim 1 wherein the shaft is fixed and the sleeve and counterplate rotate relative to the shaft.
3. A spindle motor as claimed in claim 2 wherein the sleeve supports a hub for supporting a disc for rotation about the shaft.
4. A spindle motor as claimed in claim 1 wherein the shaft is free to rotate relative to the sleeve and counterplate.
5. A spindle motor as claimed in claim 4 wherein the sleeve and counterplate are fixed to a base which supports the motor.
6. A spindle motor as claimed in claim 5 wherein the shaft supports a hub for rotation over said base.
7. A spindle motor as claimed in claim 6 wherein the hub supports one or more discs for rotation.

8. (Amended) A spindle motor for use in a disc drive comprising a shaft supporting a thrust plate at one end thereof,

a sleeve surrounding the shaft and adjacent the thrust plate and cooperating with the shaft to define a journal bearing and the thrust plate to define a [first fluid]thrust bearing,

a counterplate supported between upraised axial arms of said sleeve and located adjacent said thrust plate[to define a second fluid dynamic thrust bearing],

means for containing fluid within the thrust [bearings]bearing and the journal bearing.

9. (Amended) A spindle motor as claimed in claim 1 wherein said counterplate and said thrust plate define [a second] the fluid dynamic thrust bearing and the [welded] means for containing fluid comprise a counterplate welded to the upraised arms.

10. (Cancelled).

Please add new claims 11 through 18

11. (New) A spindle motor for use in a disc drive comprising
a shaft

a sleeve surrounding the shaft cooperating with the shaft to define a journal bearing

a counterplate welded to upraised axial arms of said sleeve and located adjacent said thrust plate to define a fluid dynamic thrust bearing,

the welded counterplate adapted to contain fluid within the thrust bearing.

12. (New) A spindle motor as claimed in claim 11 wherein the shaft is fixed and the sleeve and counterplate rotate relative to the shaft.

13. (New) A spindle motor as claimed in claim 12 wherein the sleeve supports a hub for supporting a disc for rotation about the shaft.
14. (New) A spindle motor as claimed in claim 11 wherein the shaft is free to rotate relative to the sleeve and counterplate.
15. (New) A spindle motor as claimed in claim 14 wherein the sleeve and counterplate are fixed to a base which supports the motor.
16. (New) A spindle motor as claimed in claim 15 wherein the shaft supports a hub for rotation over said base.
17. (New) A spindle motor as claimed in claim 16 wherein the hub supports one or more discs for rotation.
18. (New) A spindle motor for use in a disc drive comprising
 - a shaft supporting a thrust plate at one end thereof,
 - a sleeve surrounding the shaft and adjacent the thrust plate and cooperating with the shaft to define a journal bearing and the thrust plate to define a first fluid thrust bearing,
 - a counterplate supported between upraised axial arms of said sleeve and located adjacent said thrust plate to define a second fluid dynamic thrust bearing,
 - means for containing fluid within the thrust bearings and the journal bearing.